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# PROPERTY APPRAISAL

A Report Prepared for the  
**Legislative Finance Committee**  
by

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October 13, 1990





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## EXECUTIVE SUMMARY

By statute, the Department of Revenue (DOR) must reappraise all property in Montana every five years. Since the adoption of the Montana Constitution in 1972 and the implementation of the reappraisal cycle, two cycles have been completed and the third is to be finished by 1993. The legislature has granted DOR a two year extension to complete each cycle, including the current one.

DOR estimates that some aspects of the current reappraisal cycle are on schedule. Field review of all types of property is complete. However, other tasks--such as development and review of market and cost models for residential and commercial property; review of inventory sheets for residential, commercial, agriculture and timber property; and collection and entry of income and expense data for commercial property--are notably behind schedule.

DOR has provided three reasons for delays: 25 percent turnover in field staff in the last year and a half; difficulties with development of its computer assisted mass appraisal system (CAMAS); and diversion of staff resources to implement House Bill 703.

In 1989, DOR requested the two year extension in the reappraisal cycle to develop CAMAS to assist in the reappraisal process. The system was anticipated to be fully functional by November 1989. At the present time, the system software is completed, but has not been fully tested. DOR has not ventured an opinion as to when the system will be fully operational or at what point CAMAS delays might impact completion of the reappraisal cycle by 1993.

DOR has faced some major challenges in the implementation of CAMAS. DOR personnel installed software and equipment in all county offices by

June 1989. Equipment failures during the first year of operation left field offices without access to the appraisal system and sometimes to other software such as word processing and spread sheet applications for weeks at a time. Replacement of unreliable machines by the manufacturer and contracting for on site maintenance seems to have corrected such difficulties.

Problems with CAMAS software will require additional training and delayed transfer of agricultural and timber land data to the system. The consultant hired to develop CAMAS plans to have many of these errors corrected by mid-October. DOR staff is working to correct the remaining problems.

The computer purchased to run CAMAS is proving too small to accommodate the system. DOR is considering purchase of additional disk storage, a larger central processing unit, and an adequate back-up support, at an estimated cost of \$540,000.

County staff are not able to print CAMAS reports. This inability causes delays in reviewing and verifying data. DOR staff are trying to improve printing capacity in county offices.

At present, DOR is unable to electronically transfer CAMAS data from county appraisal computers to county assessors' computers. DOR is working with vendors that support county computer systems to develop techniques for transferring the necessary data.

The total cost of developing CAMAS may exceed \$1.5 million. DOR is preparing an estimate of total development costs and operational costs. There are several ongoing operational costs that were not anticipated during the last session that may increase annual costs by nearly \$400,000 above the level anticipated by the 1989 legislature.

This report raises several issues related to property reappraisal and computerization of appraisal offices. The Legislative Finance Committee



may want to consider requesting DOR to address the following issues in its budget hearings during the 1991 session.

1. When will CAMAS be fully operational? Is it possible that full implementation of CAMAS will not be accomplished in time to allow the reappraisal cycle to be completed by 1993?
2. What is the total cost of CAMAS, including ongoing support and maintenance, compared to the cost anticipated in the 1989 session? How will additional costs be funded?
3. How will automated data transfer be accomplished between the county appraiser and assessor's office? What costs will be incurred to provide such transfer and who will bear the costs?
4. Will the capability be developed to allow all counties to print CAMAS reports on site? If so, what is the estimated cost?
5. Once CAMAS is implemented, can future reappraisal work be speeded, allowing more frequent cycles?
6. In future cycles, will a comprehensive field review be necessary to ensure that data elements in CAMAS are accurate? If so, at what point in time and at what cost does DOR anticipate such a review?

## PURPOSE

This report discusses the status of the current reappraisal cycle, which must be completed by December 31, 1993. The first section of the report provides details on the three reasons DOR is falling behind schedule in some reappraisal tasks. The second section analyzes one of these reasons--delays with CAMAS--in depth, discussing the difficulties DOR has faced and its efforts to resolve those problems. The final section of the report outlines some potential budget issues regarding this system and potential impacts on timely completion of the reappraisal cycle.

## COMPLETION OF THE CURRENT REAPPRAISAL CYCLE

The 1989 legislature extended the deadline for DOR to complete the current reappraisal cycle from December 31, 1991 to December 31, 1993. The legislature also required the department to provide status reports on the reappraisal cycle to the Revenue Oversight Committee (ROC) this interim.

At the September 28 ROC meeting, the administrator of the Property Assessment Division of DOR, stated that some aspects of the property reappraisal cycle are on schedule. Field reviews for all types of property are essentially complete. Verification of residential property sales data is proceeding according to schedule. All reappraisal tasks for industrial property are on schedule, with the exception of transfer of data from a personal computer to CAMAS. However, some significant tasks are behind schedule: development of market models and cost tables for residential and commercial property; review of inventory sheets for residential, timber land, agriculture and commercial property; collection of and entering income and expense data for commercial property; entering commercial improvements into

CAMAS; and capturing building improvements on agriculture and timber property. Attachment 1 summarizes DOR progress in fulfilling specific reappraisal tasks.

In testimony before ROC, the administrator stated that there are three reasons for these delays: 25 percent turnover in field staff in the last year and a half; redirection of staff resources to implement House Bill 703; and problems with computerization.

## Turnover in Field Staff

One factor contributing to backlog in some aspects of the appraisal cycle is turnover of field staff. During the current biennium, DOR is authorized 69 appraisers and advertised to fill 20 vacancies in fiscal 1990. That number would represent an annual turnover rate of 29 percent. Appraisers, located in county offices, are responsible for establishing the appraised value for all types of real property including new construction, except industrial and centrally assessed property which is done by staff located in Helena. Work productivity can be significantly impacted while new staff acquire necessary skills. New appraisers must successfully complete training and pass a probationary period before promotion to a permanent status, a period which can span one year. DOR offers classes in residential, agricultural, timber, commercial and industrial appraisal annually. Specialty classes are offered intermittently by consultants.

Salary appears to be part of the reason for staff turnover. Current employees said that pay freezes in the 1989 biennium and the raise in the 1991 biennium were perceived as insufficient by some persons who left their jobs. Entry level grades and salaries for appraisers range from grade 9 (\$15,662) to grade 11 (\$17,925). Employees advance one grade (about

\$1,300) after successful completion of probation. Former appraisers cited pay and stress as the two significant causes of turnover.

## Implementation of House Bill 703

Staff time spent on reappraisal activities has competed with demands of implementing House Bill 703 this biennium. This bill, passed during the 1989 session, requires DOR to annually adjust appraised values of real property to reflect recent sales data. Appraisers have diverted time from reappraisal to participate in the establishment of study areas, verify sales data, and resolve taxpayer appeals on valuation changes resulting from the bill.

The number of appeals and reviews, due in part to House Bill 703, has contributed to delay in some reappraisal tasks. DOR estimates that appraisal staff have received at least 3,000 requests from taxpayers to review property valuations since January 1, 1990. The department estimates that about 1,000 of these requests were resolved, but that slightly more than 2,000 were appealed to county tax appeals boards, and about 134 were subsequently brought to the State Tax Appeal Board (STAB). Local officials in Cascade County estimate that 1,145 appeals have been filed in that county alone. In comparison, county boards heard 682 appeals in 1989, of which 172 were appealed to STAB.

In a STAB ruling upholding one of the appeals this year, the issue of the constitutionality of House Bill 703 was raised. DOR requested that the Montana Supreme Court take original jurisdiction in the case, due to time constraints in preparing local government budgets and taxes. The Court heard the case in August and issued a preliminary opinion on September 11 stating that the 1990 stratified sales assessment ratio study "offends constitutional principles." Recognizing that local governments had

a very short time remaining to calculate assessed values and mail property tax notices for 1990, the Court delayed the effective date of its decision to December 31, 1990. Department personnel expect that the number of appeals heard by STAB could increase after the Court's full written opinion is issued.

## Problems with Computerization

Delays in the implementation of CAMAS have caused some reappraisal tasks to fall behind schedule. While DOR planned that the system would be fully operational by November 1989, the system is still not fully functional. The contract with the consulting firm developing the system has been extended from June 1990 through October 1990. Software testing and correction of problems identified to date are not yet finished. At the present time, DOR is not sure when the system will be fully operational. The following section details the problems DOR has faced in developing and implementing the new system and the efforts it has made and is making to resolve these problems.

## COMPUTERIZATION OF COUNTY APPRAISAL OFFICES

The 1987 legislature approved a DOR modified budget request to develop an on-line property appraisal data system accessible from 19 county appraisal offices. As described in the request, this system was to be an on-line data capture system accessible from county offices that would electronically transmit agricultural land records and updates to existing residential/commercial records for batch processing on the state mainframe computer. An appropriation of \$381,905 was made to fund the system.



In April 1988, DOR issued a request for proposal for cost estimates for two types of systems: an on-line system utilizing mainframe processing and an on-line system accessing a mini to mid range computer. After analyzing the RFP responses, DOR elected to develop an on-line system that would process data on a mid range computer located in the DOR Helena office and to connect all county appraisal offices to the network. In August 1988, DOR hired the Ohio firm of Cole, Layer and Trumble (CLT) to develop CAMAS.

The 1989 legislature approved an extension of the appraisal cycle in order to implement CAMAS. Department personnel stated that the decision to delay the cycle and implement CAMAS supplanted the need to hire an additional 40.00 FTE to complete the reappraisal cycle.

In 1989, DOR estimated that developing CAMAS would cost a total of \$1.5 million (see Table 1). During the 1989 biennium, DOR spent about \$885,000 for equipment, contracts and other costs associated with CAMAS. The expenditures above the \$382,000 appropriated by the legislature were financed through reallocations within DOR. The remaining development costs, including portions of system development, the contract with CLT, and equipment are financed through a revolving line of credit that the state has with IBM. Repayment began in fiscal 1989 and will continue through fiscal 1994. Annual debt service payments are \$155,883. DOR testified to the 1989 legislature that ongoing savings in mainframe processing costs and postage expenses due to CAMAS were anticipated to exceed ongoing costs by about \$4,548 per year, allowing payment of debt service within the current level budget.

**TABLE 1**  
**Estimated Cost to Develop CAMAS as**  
**Presented to 1989 Legislature**

Item	Amount
Amount Paid in 1989 Biennium	\$885,000
Amount Debt Financed from FY90 to FY94	612,124
Total Estimated Cost	\$1,497,124

DOR has not funded all of the costs for CAMAS. Some development costs including software and wiring costs for each local area network installed in county offices were paid by the Department of Administration (D of A). The total cost was about \$320,000. Under policies adopted in 1988, D of A purchases the software and the machine to house the state wide network software for agencies opting to install a network. D of A will incur additional costs as it replaces machines that house the state wide network software. D of A is installing used machines that are purchased or acquired through trades so it is not possible to accurately estimate replacement costs.

## Experience with the Computerization Process

Development of a statewide on-line computer system is an ambitious undertaking. The system, once it is fully operational, will allow appraisers to enter information regarding a piece of property into the CAMAS system. The system will prompt appraisers to enter the necessary data and will compute an appraised value for each parcel of property. If the value seems incorrect, the appraiser can review and change the data elements to correct errors.

Although the concept is simple, the application in practice is complex. County appraisers must access CAMAS through county computers connected with the DOR computer in Helena. The access is made via the state mainframe computer through a network connection that sends transmissions over data lines to Helena. The state mainframe translates messages from county computers to the DOR computer where appraisal data is processed. The mainframe then translates output from the DOR computer back to the county computers.

The Montana CAMAS is the most intricate system that CLT has developed. Design specifications call for it to store and manipulate three years of appraisal records--the current year, the coming year and the previous year. It must also be able to calculate and accommodate values for two appraisal cycles--the current cycle and the future cycle. The Montana CAMAS was originally thought to be a "turn key" operation in which CLT would modify a prototype system developed for the state of Kansas to fit Montana needs. That process has not proven as adaptable as planned.

To date, DOR has accomplished several important tasks within the overall computerization process. DOR personnel tested, configured and installed all equipment necessary for the operation of CAMAS in county offices. D of A staff assisted by wiring connections with the state mainframe computer. Installation of county equipment began in late 1988 and was completed in June 1989. All county computers are now linked to the state mainframe computer and the DOR computer.

The department has received all system software and has tested most of the programs. Appraisers have been using the system to enter new construction and update residential and commercial files. However, despite these accomplishments, DOR is experiencing problems with CAMAS that are significantly delaying reappraisal tasks.

## Software Problems

Delayed receipt of some system software and the need to correct problems in the software by CLT have caused a backlog in some reappraisal tasks. Software problems have: necessitated additional training that duplicates earlier sessions; delayed transfer of agricultural and timber land data to CAMAS; and may impact field staff workload in verification of such data.

Although DOR has received all software from CLT, it has identified numerous software problems that must be corrected by the consultant. The consultant plans to rectify all software errors currently identified by October 15, two weeks before contract expiration. Since the market, and income and expense models have not been fully tested, problems with this software may become evident as DOR use of these models intensifies. One of the CLT vice presidents has indicated that the company will bear the cost of correcting software problems that are discovered within a reasonable length of time after contract completion in October.

Unavailability of some software at various points has delayed reappraisal tasks. For instance, the market model was not fully operational and the DOR computer was not functioning well during initial training of field staff learning to use the system. As a result, DOR may provide additional training in market model use to staff. At this point, it is unclear whether CLT will perform such training at no additional cost to DOR.

System problems have also delayed transfer of agriculture and timber land data stored on a personal computer (PC) to CAMAS which is resident on the DOR mid range computer. While DOR originally scheduled this conversion to be finished by fall of 1989, it is now expected to be completed by mid October. To date, agriculture data for 28 counties has been converted. The conversion has been slowed since the software developed

by the CLT does not produce accurate parcel totals and computer processing ends if a record has faulty data. Without parcel totals, DOR has no easy way of verifying that all county files were transferred to CAMAS. DOR personnel have been able to run canceled jobs after eliminating records with faulty data. However, output for those jobs is difficult to read and may add to the time necessary for county review.

Due to these problems, county staff will need to validate the accuracy of agriculture and timber records transmitted to CAMAS by comparing county data to system output. At a minimum, counties will need to ensure that each parcel of land was successfully transmitted to CAMAS. Some counties may elect to perform a more in-depth review to determine the accuracy of the data. DOR has not provided review guidelines to ensure accuracy of data elements in transferred files or an estimate of the time allowed for such review.

DOR has encountered other software problems independent of the CAMAS software. The two types of software that allow computers within an office to communicate to each other and to the state mainframe computer in Helena each requires a PC in every office dedicated to networking use. Originally, DOR had planned to use PC's in county offices in a dual capacity as work stations and as network devices. While testing equipment prior to installation in county offices, DOR personnel discovered that network software problems prevented this dual use. Since the manufacturer of the interoffice communication software was eager to have its system showcased, it purchased an additional 52 PC's for DOR in order to solve one part of the problem.

In spite of these 52 additional PC's, 45 county offices are still short one work station. DOR equipment specifications called for one terminal per 5,000 parcels during the development of CAMAS. That ratio allows one



terminal to each two to three appraisal staff. Some DOR personnel believe that the system goal should be one terminal per appraisal staff working with CAMAS data. DOR is requesting 28 additional PC's for CAMAS in its 1993 biennium budget request.

Over time, all counties will be up to design specifications for work stations. As part of its statewide network project, D of A is replacing machines that connect county offices with the state mainframe computer. As these replacements are made, PC's are freed up to be used as work stations. While D of A has made a commitment to DOR to replace machines as expeditiously as possible, it is unlikely that all computers will be replaced in time for the peak workload associated with the reappraisal cycle.

#### Equipment Failures

During the first year of operation, DOR and county offices were plagued with equipment failure problems. In fiscal 1990, the Property Assessment Division expended \$101,197 to repair multi-user computers, compared to an average annual cost for such services of \$7,264 during the previous three years.

DOR purchased two brands of PC's for county offices. Since the state did not have a term contract with the vendors of one of these brands for repair of equipment located outside of Helena, DOR planned to maintain these PC's itself. Field personnel had to ship malfunctioning PC's to Helena. DOR staff would repair computers if the maintenance was routine. If problems could not be fixed by DOR staff, then the computer was shipped to the seller in Bozeman for repair.

DOR staff estimate that the average repair time for PC's was two to three weeks. However, there were instances of longer delays. In Yellowstone County a machine failed, was out for repair for six weeks, was

reinstalled and functioning for two weeks and then failed again. These delays were serious, since some PC's also housed interoffice communications, word processing and spreadsheet software. No other computers in the office could access those programs while the machine was down.

Due to these repeated equipment problems, the vendor sent representatives from its California office to Montana to replace the defective machines with more reliable machines. The company bore all expenses of the replacement effort. With this new equipment, county offices are experiencing less equipment failure now. In addition, the state has negotiated a term contract for maintenance of computers outside of Helena. DOR signed a contract with a firm that will travel to counties to repair malfunctioning equipment.

#### Insufficient DOR Computer Capacity

The DOR computer, which was purchased after reviewing CLT's evaluation and recommendation, is proving to be too small to accommodate CAMAS. Disk storage has already been enhanced once, yet about 75 percent of the disk space is filled by a portion of one year of property appraisal data. Data for agriculture and timber land parcels for 28 counties and all industrial property must still be added, as well as another two years of data. Time required to run a "back up" tape to save daily processing activity is consuming seven hours each day, reducing the time available for other types of processing, such as transfer of agricultural and timber land data. The DOR computer is currently operating at 90 percent of its processing capacity and the most intense workloads associated with the reappraisal cycle are yet to come.

DOR is considering purchase of additional disk storage, a larger central processing unit and adequate back-up support, at an estimated cost

of \$540,000 to correct these problems. Without the upgrades, the computer may not have sufficient processing and storage capacity to allow the system to function properly especially during peak workload in the final stages of the reappraisal cycle.

DOR has already purchased an uninterruptable power supply (UPS) at a cost of \$29,000. The additional enhancement was needed because the computer went down several times due to weather conditions. DOR bought a battery operated UPS that can sustain the system for 15 minutes.

#### Lack of Printing Capability

As originally designed, CAMAS would allow county offices to print system reports on site, eliminating the two to four day delay caused by printing reports in Helena and mailing them to counties. However, at present, county staff are not able to print all system reports. When the CAMAS was designed, planners did not anticipate that the print capabilities of the DOR computer were incompatible with those of the state mainframe. All the reports and forms were designed to be printed from the DOR computer without regard to transmission over the mainframe network to the counties.

DOR is trying to correct these printing problems. A potential, but untested solution, involves state mainframe computer software. DOR personnel are optimistic that with upgrades to the software, some counties with compatible equipment will be able to print CAMAS reports on site. However, that number is limited and the cost to upgrade the software (about \$7,000) may be prohibitive.

About 25 counties have the option to print the information shown on the screen of the terminal. However, if an appraiser wants to print some types of CAMAS reports, two to four separate pages of printouts must be

pasted together to see the complete report. The number of counties with the "print screen" option is gradually expanding as software is changed on county machines.

Most counties do not have printing equipment designed to withstand heavy use. If CAMAS reports are to be printed in county offices, the mainframe software needs to allow reports to be generated locally and printing equipment would have to be significantly upgraded in most counties.

#### Transfer of Data from CAMAS to County Computers

Transfer of data files from CAMAS to county computer systems will avoid duplicating workload associated with recording changes in ownership and address. Without an automated transfer of such information, it will need to be rekeyed into county systems. The cost, as well as the party that will pay the cost, for development of software to transfer data between the CAMAS and county computer systems is unknown. There are many different types of computer systems in county offices. Only a few can readily accept data from a tape run from CAMAS files. DOR is working with vendors that support county computer systems to develop techniques for transferring data between CAMAS and county computer systems.

### Potential Budget Issues Concerning Computerization

CAMAS development and operational costs are likely to exceed the \$1.5 million estimate presented to the 1989 legislature. As proposed, CAMAS would have linked only 19 counties to the on-line data system. However, DOR extended the system to all counties because of technological advances in hardware and network software. DOR is preparing documentation of all costs expended on the system to date, additional anticipated costs, the

amount that is to be debt financed, the term of the debt, and the expected total cost of the project.

Additional development costs for CAMAS that were unforeseen during the 1989 session include upgrading the DOR computer to run CAMAS and provision of remote printing capability and automated data transfer between assessor and appraiser's offices. Operational costs that were unanticipated include contracted system support and increases in network fees and maintenance contract costs. Table 2 lists the costs by expenditure.

<b>TABLE 2</b> <b>Potential Budget Issues Associated with CAMAS</b>	
<b>Item</b>	<b>Estimated Cost</b>
<u><b>One Time Costs</b></u>	
Upgrade the DOR Computer	\$540,000
Data Transfer from CAMAS to Assessor Systems*	25,000
Provide Capability for Remote Printing**	Not Available
<b>Total One Time Costs</b>	<b>\$565,000</b>
<u><b>Annual Ongoing Costs</b></u>	
Network Fees***	\$120,377
Contracted System Support****	240,000
Maintenance Agreement	20,000
<b>Total Ongoing Costs</b>	<b>\$380,377</b>
* Cost estimate taken from CLT response to DOR request for proposal in 1988. ** DOR is preparing a cost estimate that will be available for presentation to the 1991 session. ***Network fees represent the net cost difference between the appropriated level in fiscal 1991 and the amount included in the 1992-1993 budget request. ****This estimate was given to DOR by CLT.	

As planned, CAMAS would generate savings in processing costs on the state mainframe computer that would outstrip the increased costs of network



fees. Such has not been the case. Although the cost of mainframe processing for the Property Assessment Division has fallen markedly from fiscal 1988 to fiscal 1990, network access fees have increased even more dramatically (see Table 3). If a modified budget request from D of A to expand network services and increase fees is accepted by the legislature, the Property Assessment Division will pay \$220,377 each year of the 1993 biennium for network fees, an amount that is more than double anticipated annual cost of \$100,000.

**TABLE 3**  
**Comparison of Two Computer System Costs for Property Assessment Division**

Cost	Actual FY88	Actual FY89	Actual FY90	Annual Projected FY92-FY93
Mainframe Processing	\$142,062	\$105,650	\$ 63,225	\$ 5,000
Network Fees	4,080	32,497	131,280	220,377

Maintenance costs will be higher than originally estimated because DOR will not maintain county computers with in-house staff and a consultant may be retained to provide ongoing system maintenance and support. As noted earlier, DOR has signed a contract for maintenance of county computers. DOR has also begun talks with CLT to determine the possible elements and cost of an ongoing maintenance contract. At a minimum the consultant would implement minor system enhancements requested by DOR and/or required by new legislation and provide training. DOR received an annual cost estimated to be \$240,000 from CLT. The 1992-1993 budget request submitted by DOR includes \$50,480 each year for contracted services for CAMAS development and support as well as about \$11,400 in operating costs (excluding network fees) to run the system.

## Future Appraisal Cycle Issues

Many state and local governments have installed computer assisted mass appraisal systems because such systems greatly facilitate the ability to periodically update appraised property values. Montana's CAMAS has the potential to speed work for future reappraisal cycles. While DOR has not indicated how it expects CAMAS to impact the cost or timing of future appraisal cycles, it is conceivable that the system could enable the state to complete reappraisal cycles more frequently than every five to seven years.

As CAMAS is used in future reappraisal cycles, periodic field reviews of property are critical to insure that data elements stored in the system are accurate. Computer assisted systems are highly dependent on good data elements. The initial data base describing each parcel of property must be accurate. Periodic comprehensive field reviews must be performed to insure that data elements of appraisal records continue to be complete and accurate.

During the current reappraisal cycle up to 30 percent of real property is scheduled to receive some type of field review. Appraisers, in conjunction with the area managers, decide which properties will receive a field review to verify data elements of the property appraisal record. Such decisions can be instigated by comparisons of sales data to appraised values or a knowledge that data elements for property appraisals in a particular area need to be examined.

There are two types of review. A limited field review encompasses a visual inspection of the outside of the property. A comprehensive review requires a visual inspection of the property, including validating such information as the dimensions of the structures, the number of bathrooms, the existence of a basement, and the lot size. During the current cycle,

DOR plans to accomplish a limited field review of about 10 percent of the residential and commercial property statewide and a comprehensive review of about 20 percent of such property. DOR has not estimated field review requirements of future reappraisal cycles.

This report raises several issues related to property reappraisal and computerization of appraisal offices. The Legislative Finance Committee may want to consider requesting DOR to address the following issues in its budget hearings during the 1991 session.

## ISSUES

1. When will CAMAS be fully operational? Is it possible that full implementation of CAMAS will not be accomplished in time to allow the reappraisal cycle to be completed by 1993?
2. What is the total cost of the on-line data system, including ongoing support and maintenance, compared to the cost anticipated in the 1989 session? How will additional development costs and ongoing costs be funded?
3. How will automated data transfer be accomplished between the county appraiser and assessor's office? What costs will be incurred to provide such transfer and who will bear the costs?
4. Will the capability be developed to allow all counties to print CAMAS reports on site? If so, what is the estimated cost?
5. Once CAMAS is implemented, can future reappraisal work be speeded, allowing more frequent cycles?
6. In future cycles, will a comprehensive field review be necessary to ensure that data elements in CAMAS are accurate? If so, at what point in time and at what cost does DOR anticipate such a review?

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Computer Equipment	\$745,200
System Software	\$196,900
Property Assessment System – CLT	\$555,000

**Total Costs Proposed To Legislature** **\$1,497,100**

### Additional Implementation Costs

Equipment Upgrades-AS/400 and PC's	\$142,900
Uninterrupted Power Supply	\$35,000
Additional Staff Training	\$28,000
Additional Appraisal Manuals	\$23,000

<b>Total Additional Costs</b>	<b>\$228,900</b>
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<b>Total System Costs</b>	<b>\$1,726,000</b>
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## Options For Addressing CAMAS Budget Issues Ongoing Support and Maintenance Costs

### Purchase Option

Annual Operating Costs	FY90 Budget	FY91 Projected	FY92 Projected	FY93 Projected	Total
Original Debt Service	\$155,880	\$155,880	\$155,880	\$155,880	\$623,520
Network Connect Charges	\$100,000	\$133,000	\$220,400	\$220,400	\$673,800
Equipment Maintenance	\$24,000	\$30,000	\$30,000	\$30,000	\$114,000
AS/400 Upgrade		\$540,000			\$540,000
Remote Printing		\$368,800			\$368,800
County Data Transfer			\$25,000		\$25,000
CLT System Support		\$160,000	\$240,000	\$254,400	\$654,400
<b>Total</b>	<b>\$279,880</b>	<b>\$1,387,680</b>	<b>\$671,280</b>	<b>\$660,680</b>	<b>\$2,999,520</b>
<b>Supplemental Required</b>		<b>\$1,107,800</b>	<b>\$391,400</b>	<b>\$380,800</b>	<b>\$1,880,000</b>

### Finance Option

	FY90 Budget	FY91 Projected	FY92 Projected	FY93 Projected	Total
Original Debt Service	\$155,880	\$155,880	\$155,880	\$155,880	\$623,520
Network Connect Charges	\$100,000	\$133,000	\$220,400	\$220,400	\$673,800
Equipment Maintenance	\$24,000	\$30,000	\$30,000	\$30,000	\$114,000
AS/400 Upgrade		\$66,355	\$132,710	\$132,710	\$331,775
Remote Printing		\$45,300	\$90,600	\$90,600	\$226,500
County Data Transfer			\$25,000		\$25,000
CLT System Support		\$160,000	\$240,000	\$254,400	\$654,400
<b>Total</b>	<b>\$279,880</b>	<b>\$590,535</b>	<b>\$894,590</b>	<b>\$883,990</b>	<b>\$2,648,995</b>
<b>Supplemental Required</b>		<b>\$310,655</b>	<b>\$614,710</b>	<b>\$604,110</b>	<b>\$1,529,475</b>
<b>Difference - Purchase vs Finance</b>		<b>\$797,145</b>	<b>(\$223,310)</b>	<b>(\$223,310)</b>	<b>\$350,525</b>

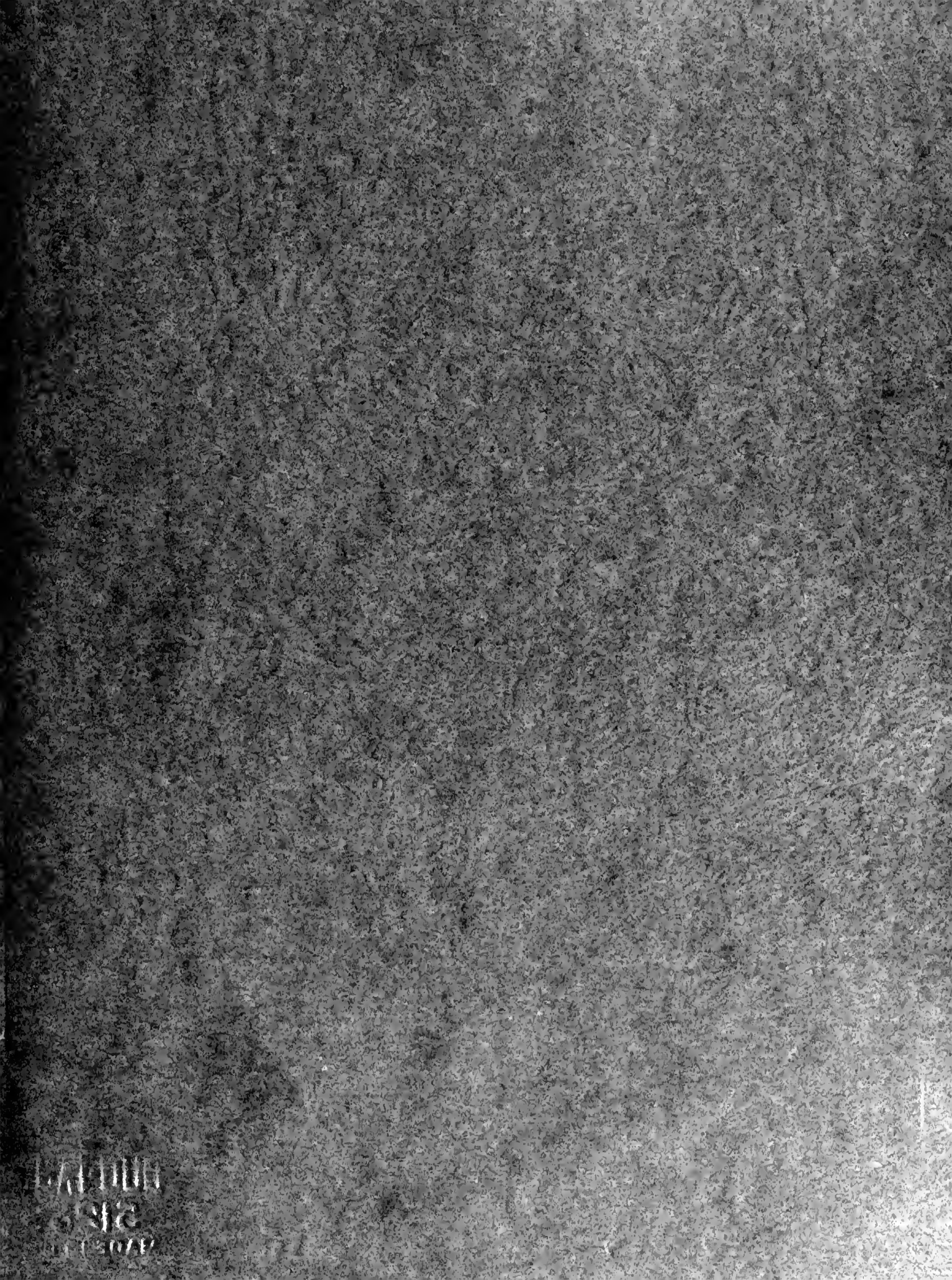




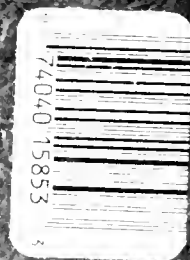
### Additional Equipment Needs

	Purchase Option	5 Year Finance Option
Additional PC's For Public Access	\$59,000	\$14,500
Additional PC's For Appraisal Staff	\$228,000	\$56,033





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